

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of:

Helmut MANGOLD, *et al.*

Serial No.: 10/020,920

Filed: December 19, 2001

For: PYROGENIC OXIDES DOPED WITH
POTASSIUM

Confirmation No. 8866

Art Unit: 1793

Examiner: N. Y. M. NGUYEN

Atty. Dckt: 032301.603 (*formerly 39509.176287*)

AMENDED APPEAL BRIEF

Sir:

This is in response to a Notification of Non-Complaint Appeal Brief dated February 13, 2009. The initial response due date is March 15, 2009. Pursuant to M.P.E.P. 1205.03, a new section (5) SUMMARY OF THE CLAIMED INVENTION is enclosed.

Applicant believes no fees are required. The Commissioner is hereby authorized to charge any additional fee or credit overpayments to Deposit Account No. 024-300 for the purposes of maintaining the pending status of this application.

(5) SUMMARY OF THE CLAIMED INVENTION¹

There are three independent claims: claims 1, 4 and 10. Claim 1 is directed to spherically shaped potassium doped pyrogenically produced metal or metalloid oxide particles having a breadth of particle size of at least 0.7. See page 2 at lines 14-15. Also see Example 7 (pp. 17-18), Table 4 (pp. 27 and 28) and Figures 11 to 13). Claims 4 and 10 are directed to two-step method for the preparation of the product described in claim 1. See page 3 at lines 4-18. The actual steps are the same. The difference between claim 4 is open to the presence of other steps while claim 10 is closed. This is the transition phrase. Claim 4 is Claim 4 (“comprising”) requires the performance of at least the enumerated steps. Claim 10 (“consisting of”) the performance is limited to the two enumerated steps. These steps are the same.

Claim 1 further characterizes the particles as having 1) uniformly distributed potassium having a concentration from about 0.03 to 20% by weight (see page 1, lines 14-15), 2) BET surface between 1 and 1000 m²/g (see page 2 at line 3) and 3) a pH of more than 5, when the particles were present in a four percent dispersion (see page 2, line 17).²

Claim 4 describes a two step process. The first step is the feeding of an aerosol-gaseous mixture into a flame under conditions suitable for producing pyrogenic oxides by flame oxidation or flame hydrolysis to form the potassium-doped pyrogenic oxide spherical particle product having a distribution of particle size of at least 0.7. The second step is the direct

¹ The instant specification discusses the unexpected nature of the morphological changes in potassium doped pyrogenically produced silica particles first seen at a minimum potassium concentration. The morphological change in particle concentration permits one to achieve the claimed narrow particle size distribution in a two step process without the need of filtration. Such a narrow distribution of particle sizes was not recognized for potassium doped pyrogenically produced silica prior to Appellants’ work.

² The product is suitable for chemical mechanical polishing (CMP) applications. (See, for example, page 4 of the specification in the paragraph starting at line 17).

recovery of the identified pyrogenic-doped oxide particle product directly from the reacted aerosol-gaseous mixture. Claim 4 specifies the use of an aerosol with a concentration of a potassium salt of more than 0.5% by wt. (See, for example, page 3 of the specification at lines 4-18).³ The process is exemplified in Examples 2-7. See Table 1 for conditions. See Table 2 for the recovered product characteristics. Claim 4 permits the presence of other steps due to its use of “comprising.”

Claim 10 describes a process similar to that of claim 4, differing in that Claim 10 employs the closed transition phrase “consisting of” and therefore, is limited to the two enumerated steps. Claim 10 specifies the use of an aerosol with a concentration of a potassium salt of more than 0.5% by wt. (See, for example, page 3 of the specification at lines 4-18).³ The process is exemplified in Examples 2-7. See Table 1 for conditions. See Table 2 for the recovered product characteristics.

³ The morphology changes and narrow distribution of particles are apparent from Figures 11A-13B (Table 4 and Example 7 (20% potassium dopant)). Figure 8A-10B (Table 3 and Example 1) illustrate the results obtained in the absence of a dopant.

CONCLUSION

For the reasons set forth above and in the Appeal Brief, it is respectfully submitted that claims 1-7 and 9-11 are patentable over CA 2,223,377 taken in view of Vanell (U.S. 6,423,638) or Hall et al. (U.S. 6,372,648). Accordingly, the Examiner's rejection of these claims should be reversed.

Respectfully submitted,
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